CLAIMS

1. An electrochemical microsensor device for measuring or regulating ions of at least one of chlorine and bromine comprising, a substrate supporting an arrangement of at least two electrodes, wherein one of the electrodes is an anode and one of the electrodes is a cathode, wherein the electrodes are formed using a thick film technique, wherein the anode and the cathode are disposed adjacent to each other, and one electrode is substantially nested within the other electrode, and wherein the anode is adapted for oxidation of ions of said at least one of chlorine and bromine.

2. The electrochemical microsensor device of claim 1, wherein the substrate is an insulating material selected from the group consisting of plastic, glass, ceramic, quartz, and mixtures thereof.

3. The electrochemical microsensor device of claim 1, wherein the substrate is alumina.

4. The electrochemical microsensor device of claim 1, wherein the anode comprises a material selected from the group consisting of gold, platinum, palladium, silver, and carbon.

5. The electrochemical microsensor device of claim 1, wherein the cathode comprises a material selected from the group consisting of silver-silver chloride and mercury-mercuric chloride.

6. The electrochemical microsensor device of claim 1, wherein said electrodes comprise a connect portion and a sensing portion, wherein said connect portion of the electrodes connects the electrode to an electrical circuit, and is protected from the environment by an insulator, and wherein said sensing portion of the electrodes is exposed to the environment.

7. The electrochemical microsensor device of claim 1, wherein the thick film technique comprises:

providing at least one template containing a pattern for the arrangement of the electrodes;

contacting the substrate with the template;

applying at least one electrode precursor ink, and insulator precursor ink onto the template/substrate to form a sensor configuration according to the template pattern;

drying the sensor configuration; and

firing the sensor configuration.